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The Royal Veterinary College.

During the past week, all our five schools have reopened their doors for the session 1908-9. The inaugural meeting of the senior College at Camden Town was held on Thursday last—rather later in the week than usual - with a good attendance of students and visitors. The gathering was a pleasant one, though tinged with regret by the recent great loss the school has sustained in the death of Sir Nigel Kingscote, the value of whose services to the institution, dating from before the granting of its first Charter to the present day, received fitting recognition at the commencement of the meeting. Prof. Wooldridge, in the course of an excellent and suggestive inaugural address, raised many points worthy of consideration, of which space will only permit us to indicate three. One was a suggestion regarding the vexed question of compensation for tuberculosis. Its general adoption will only be possible when we have a complete system of veterinary inspection in public abattoirs—but it should certainly be considered before that time arrives. Another related to provision for veterinary education by the State. It was probably news to most of the audience that a Departmental Committee appointed by the Board of Agriculture, and dealing with the subject from an agricultural standpoint, has strongly recommended that the Government should adequately provide for the training of veterinary surgeons, on whom so much of the prosperity of agriculture depends.

The recommendations of Committees are not always acted upon; but we may hope that this one, which could hardly have been more emphatically worded, may have at least some effect in the near future.

The third is a suggestion that an additional post-graduate course should be instituted—in surgical anatomy, veterinary medicine and surgery, and sero-therapy. This has been needed for a long time past, and there seems no reason why it should not be commenced during the present collegiate year. The post-graduate course in pathology and bacteriology is doing great good; the one suggested would be equally valuable to a much larger number of veterinary surgeons, and would be gladly utilised by many who would not care to take the present course.

TUBERCULOSIS OF RETRO-PHARYNGEAL LYMPHATIC GLANDS.

By Walter Jowett, F.R.C.V.S., D.V.H.,
Department of Agriculture, Cape Town.

Spartz, Director of the Luxembourg Abattoir, has drawn attention to the frequency with which the Retro-Pharyngeal lymph glands exhibit lesions in tuberculous cattle, and this observation is of considerable importance, since animals are occasionally found presenting lesions alone in these glands, all other organs and tissues appearing quite healthy. Obviously then, when the post mortem examination is incomplete such solitary tubercular foci might easily remain undetected.

Tuberculosis of the upper respiratory passages, as Spartz observes, is rarely indicated in veterinary medicine, and the text-books contain but little information in regard to tuberculosis of the glands of the head.

During the past few months it has fallen to the lot of the writer to submit to post-mortem examination a considerable number of cattle, reactors to tuberculin inoculation, but which in the majority of cases gave no clinical indication of being the subjects of tuberculosis—to all appearances the animals were in perfect health, and in many cases in quite good condition. In the routine examination of such cases, it has been the writer's custom invariably to examine the lymphatic glands of the head in addition to those of the thoracic and abdominal viscera and the dressed carcase.

It may be of interest to record a summary of notes taken at a hundred consecutive post-mortems —these be it said are merely extracts from the notebook dictated at the time of observation to an assistant—they are by no means specially selected or unusual cases.

The order in frequency with which the various organs exhibited tuberculous lesions was as follows:

In the lungs they were found in 65 cases, in the bronchial glands in 62, and the mediastinal glands in 42. Next in order of frequency come the retro-pharyngeal glands, affected in 39 animals. In the mesenteric glands, tuberculous lesions were found in 35 animals, in the liver in 34, the portal lymph gland showing macroscopic lesions in only 16 cases. The pleura was affected in 16 animals and the peritoneum in 3 only, the sub-maxillary gland in 5, the spleen in 3, whilst the dorsal and sternal lymphatic glands, udder, and mammary lymph glands were each found affected only in 2 animals.

As one would naturally expect, lesions were found in the lungs in the majority of cases, but one's attention is speedily arrested by the high per-

centage in which the retro-pharyngeal glands were affected, viz., of one hundred tuberculous subjects, 39 had well marked lesions in these glands, and in 4 of these 39 animals, in spite of a carefully conducted examination, no trace of tuberculosis could be detected in any other organ of the body.

In eight of the hundred animals which had undoubtedly reacted to the tuberculin tests, tuberculous lesions were discovered on post-mortem examination only after a very searching and complete examination. These eight cases exhibited lesions in the following order :—

In the retro-pharyngeal glands alone in 4 cases; in the liver and portal glands alone in 2 cases; in the bronchial glands in 1 case, and in the mesenteric glands alone in 1 case.

Of these 100 reactors, it might be said that only two exhibited clinical indication of being the subjects of tuberculosis; in one of these, coughing, wasting, and diarrhœa was in evidence, whilst the other, although in good condition, showed a pronounced swelling in the inferior parotid region and throat. This animal coughed occasionally and the act of deglutition appeared to cause considerable discomfort, this act was accompanied by a peculiar noise, easily heard on standing some little distance from the animal.

The accompanying photograph, taken prior to slaughter, shows the head of this animal, and although the background hardly forms sufficient contrast, the swelling referred to may be easily seen.

On post-mortem examination, extensive lesions were found in both lungs and bronchial and mediastinal glands, in addition to the glands of the head. The retro-pharyngeal and submaxillary gland were enlarged to the size of a goose's egg.

The gland shown on the photograph was of the size indicated, enormously thickened and cantained in its interior a purulent fluid, microscopical smears of which disclosed the presence of innumerable cocci, and many acid-fast bacilli, evidently a mixed infection.

This, of course, may be a somewhat unusual case, but the object of the present note is mainly to call attention to the importance of systematically examining the glands of the head—especially the retro-pharyngeal – when conducting post-mortem examination on tuberculous cattle, and like Spartz, to call attention to a lesion frequent enough, but which may be easily passed unperceived if the examination is not complete.

IMPACTION OF THE RUMEN IN A DAIRY COW.

On Friday, the 18th September, I was called to a dairy cow which had got into a field of ripe, standing oats, and had overgorged herself. On arrival I found a little, well made red and white Irish dairy cow lying in a semi-conscious condition and unable to get up, the nose was dry, ears cold, eyes sunk, and eyelids closed, pupils dilated, breathing slow and almost imperceptible, paunch distended and hard, hair on end, and in fact the symptoms generally simulated very much the coma period of milk fever in the cow. I had the animal moved to a loose box, trussed her well up on her belly and sternum, and with some difficulty administered four ounces of Hypo-sulphate of soda dissolved in two pints of warm water, and 1½ ounces of Parke, Davis and Co's. Standardised fluid extract of ginger. As the tongue was practically powerless great care was used in drenching.

Six hours after, no alteration in the case, when 14 ounces of Sulphate of magnesia and 8 drachms of powdered Barbadoes aloes mixed in one quart of warm water and 1½ ounces of the fluid extract of ginger were given.

Ten hours later a slight improvement was shown, the cow holding her head up and more sensitive, but unable to rise, bowels acting, the fæces being practically pickles of corn, I administered 15 ounces Linseed oil and 1½ ounces Fluid Extract of ginger.

In another twelve hours after the bowels were acting freely, the excreta consisting mostly of whole oats; the cow was now fully conscious, able to rise, and walk about: allowed her to drink a little cold water but no food to be offered, and although the beast seemed convalescent the oil and ginger were repeated. Next day the patient was all right and chewing the cud.

I attribute the success of the case mostly to the stimulating and sialogogical action of and the quantity of the Fluid Extract of ginger used. The strength of the standardised fluid extract being ten times that of the B.P. tincture of ginger, so that the quantity given to the cow would have made 60 ounces of the ordinary commercial article. From the extreme coma and the gorged condition of the paunch I had very little hope of the case pulling through, and although very little purgative medicine was given I never saw the bowels of a cow act so lively. In acute cases of diarrhœa in cattle on grass I use the Fluid Extract of ginger in combination with Chlorodyne or Tincture of opium and Linseed oil, from 1½ to 1 ounce each of the Ginger and Chlorodyne, and 10 ounces of oil every eight hours with splendid effect.

HENRY THOMPSON, M.R.C.V.S.

Aspatria.

ABSTRACTS FROM FOREIGN JOURNALS.

THE SURGICAL TREATMENT OF STRINGHALT IN THE HORSE.

Prof. R. Bassi, Director of the Veterinary School of Turin, has made a long study of this disease with the view of finding a method of treating it surgically. Several of his observations were published in 1872, 1875, 1879, and 1885, in *Il Medico Veterinario*, and 1897 in *Il Moderno Zooiatro*.

In the *Revue Générale de Médecine Vétérinaire*, Jan. 1st, and also the 15th, 1906, the Professor relates three other cases which confirm the ideas exposed in his last paper published on this subject in 1897.

Tuberculosis: Submaxillary and Retro-Pharyngeal Lymphatic Glands. Cow.

Note by Walter Jowett, F.R.C.V.S.

In this work he formulated the following:

1. In the horse and ox there is a form of stringhalt (harper chronique *French*) resulting from the sudden displacement beyond the normal limits of the patella on to the internal border of the femoral trochlea.

2. A second form of stringhalt that very often accompanies the evolution of chronic dry tarsal arthritis in the horse.

3. On rare occasions there is found in the horse a third form of stringhalt which was described by Hertwig as due to retraction of tensor muscle of the fascia lata. This is curable by division of the retracted muscle as verified by two observations of Bassi.

4. There are also some forms of stringhalt which may be qualified as nervous, because they are dependent on lesions of the brain and spinal cord. They are seen in the horse and in other animals, notably the dog.

5. There is no doubt that very many cases of stringhalt completely disappear or are diminished by division of the pereneo-prephalangeal muscle; but it is equally true very many cases treated by this last operation are not followed by good results.

6. Prof. Dieckerhoff advanced the opinion that the determining cause of "idiopathic" stringhalt was due to an irritation, followed by retraction and shortening of the aponeurosis of the limb, and in particular that portion which descends the anterior face of the limb and hock and which unites upon the metatarsus with the tendon of the anterior phalangeal extensor. To meet this view he introduced and performed the operation of dividing that portion of the descending aponeurosis in the centre of the hock. This operation is alone performed or, if it remains insufficient, at the same time, tenotomy of the peroneo-prephalangeal muscle.

Bassi's *first case* was a low stringhalt (harper bas *French*) treated by double neurotomy (posterior and anterior tibial nerves). The subject was an aged she-ass. Six days after the operation there was no trace of the hind limb being snatched up. It was probably a symptom of dry tarsal arthritis.

Second case. Low stringhalt. Recovery by division of the peroneo-phalangeal muscle. Subject: Six year old Italian gelding. Affected both hind limbs, more marked on the off than the near. Was not certain whether it was a dry tarsal arthritis or one of retraction of peroneo-phalangeal muscle. Applied ung. hydrarg. biniod. to the inside of both hocks. As there was no improvement, point-fired the inside of both hocks. Three weeks later as there was still no improvement, obtained owner's consent to allow him to perform tenotomy. Six days after as there was an improvement advised owner to put animal to light work, which he did by driving it a few days after 20 kilometres when the symptoms diminished and afterwards totally disappeared. From this case, one may affirm that by tenotomy of the lateral phalangeal extensor muscle a form of stringhalt, which is not the consequence of dry tarsal arthritis, may be cured.

Third case. Patellar stringhalt in both hind limbs of an eight-year light draught horse cured by division of the internal tibio-patellar ligament. This animal was seriously and permanently affected. Bassi divided *subcutaneously* not only the internal tibio-patellar ligament but also a part of the neighbouring aponeurotic fascia. He was not surprised to find incomplete results immediately. Complete recovery was obtained in about a fortnight. Two instantaneous photographs are given of this case.

He concludes his interesting paper by saying "I think I am justified in considering the three fresh cases of stringhalt, treated by three different surgical operations, as a certain demonstration that the three forms observed and described are curable; that we should notably consider *as such patellar stringhalt, stringhalt resulting from retraction of the peroneo-phalangeal muscle, and symptomatic dry tarsal arthritis.*"

H. G.

A Contribution to the Study of Chronic Bronchitis and Broncho-Pneumonia in Bovines.—By Dr. L. Reisinger, of Vienna.

The broncho-pneumonia described by the author is rather common in bovines. It is caused by a germ, which, though only exercising its pathogenic action by the aid of an adjuvant cause, is none the less the specific agent of the affection. The disease is essentially chronic, and, at the outset, the clinical symptoms may be confused with those of tuberculosis and peri pneumonia.

The affection has its starting-point in the bronchi; from thence the pathological process extends to the pulmonary tissue; it is localised more particularly in the anterior lobules of the lung, and the portion of the lung beneath the shoulder should be examined to discern the clinical symptoms of the disease. These consist of dry and moist râles of varied character, cough, pain on pressure of the thorax, etc,

The pathological changes are characterised by thickening and dilatation of the walls of the bronchi, which contain muco-purulent matter. Sometimes cavities are found in the midst of the pulmonary tissue, and sometimes caseous or calcified masses. The pleura is thickened, and attached by fibrous adhesions to the costal pleura, the diaphragm, or the pericardium. The bronchial glands are larger than normal, infiltrated, but not tuberculous. Section of the lungs shows that the process extends from the large bronchi to the bronchioles, and from these to the pulmonary tissue. The latter is finally invaded by granulation tissue, which becomes indurated, and in which the flexuous and dilated bronchus is still seen.

The affection is apyretic so long as the lesions remain limited to the bronchi; and, in that stage, the general condition of the subject is not influenced.

The specific agent is an organism somewhat analogous to that of rouget. It stains by Gram's method, and is also stained very well by the aniline dyes. It grows well upon agar and calf serum.

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Morphologically and culturally, it resembles the bacillus which Harth and Reisinger have isolated in the broncho-pneumonia of calves, and which they have identified with the *bacillus pyogenes bovis*; it only becomes pathogenic by the intervention of adjuvant causes. Attempts at experimental infection, made by the authors, have not been successful.—(*Annales deMéd. Vét.* Ex. *Monatschr für prakt. Tierh.*) W. R. C.

SOUTH DURHAM AND NORTH YORKSHIRE VETERINARY ASSOCIATION.

A meeting was held in the Imperial Hotel, Darlington, on Friday, July 10. Mr. John Wilson, of Yarm, presided. There were also present: Messrs. P Snaith and A. C. Forbes, Bishop Auckland; C. G. Hill, W. N. Dobbing, and J. H. Taylor, Darlington; W. H. Blackburn, Barnard Castle; E. H. Pratt, Northallerton; Dr. Hern, Darlington; and W. Awde, Stockton-on-Tees.

The minutes of the previous meeting were taken as read and confirmed, on the proposition of Mr. Pratt, seconded by Mr. Dobbing.

The SECRETARY stated that he had sent a letter to the Royal Institute of Public Health informing them that Mr. Jno. Wilson had been appointed their delegate and enclosing cheque for one guinea, but had not received any reply thereto.

Mr. WILSON stated that he had received the papers and admission ticket for the forthcoming Congress.

Mr. WILSON mentioned that a nail had run into a mare's foot, and ultimately canker set in with the result that the bones of the foot became absorbed or nearly so; and he showed the pedal and navicular bones which had been removed. In spite of all this the mare being pregnant carried her foal through and was now suckling it.

He also exhibited a rib bone which was found protruding from the body of a fowl which it had evidently swallowed.

He mentioned having performed Cæsarian section on a mare. The foal lived for four days and died, when it was found out that no orifice existed for the passage of fæcal matter, and the owner had not previously observed it.

Mr. HILL stated that he was called to see a mare with a broken leg and was told by the owner that she was then due to foal, and asked for the fœtus to be removed. She was then down on the floor. He therefore put the mare under chloroform and made an examination of her and found the uterus nicely contracted and no foal there at all.

ELECTION OF OFFICERS.

President.—Mr. A. C. FORBES, proposed by Mr. Taylor, seconded by Mr. Snaith, and carried unanimously.

Vice-Presidents.—Messrs. JOHN WILSON and C. G. HILL were proposed by Mr. Taylor, seconded by Mr. Dobbing, and carried.

Hon. Sec. and Treas.—Mr. W. AWDE was re-elected on the proposition of Mr. Wilson, seconded by Mr. Hill.

Auditors.—Messrs. W. N. DOBBING and J. H. TAYLOR were re-elected, and thanked for their past services.

ANTHRAX.

By E. H. PRATT, M.R.C.V.S., Chief Veterinary Inspector to the North Riding County Council, Northallerton.

I have been asked to bring the subject of Anthrax before this Association. It is with great pleasure that I do so for I am especially interested in it, and trust that I may gather a little more information. There is no doubt that one is not able, from his own experience, to gather all the facts about a disease; but I think one is liable to get into a biased way of looking at a subject and the very best corrective for that is to discuss or exchange views in an enquiring manner with those who have had other experience, and where can this be better done than at such a meeting as this.

I never attend a veterinary meeting without feeling that it has been time spent pleasantly and well, and I only regret that all our fellow practitioners will not step out of their reclusive habits to come and share their views with us. I believe there is no member of our profession but must have had some experience, which, if he would but attend such meetings as these and recount it, would add some stone to the growing edifice of knowledge and at the same time he would receive two fold for all he gave. Anthrax is unquestionably a very old disease; it has worked its ravages from the earliest ages, but whether it has increased or not of recent years in this country is a question which I doubt can be answered with certainty. Statistics would lead us to believe that it is on the increase. They may be right, but I also believe that the disease is becoming better known and its seriousness better appreciated by stock-owners, who, therefore knowing the risks they run in the disposal of an anthrax carcase, are more anxious to have a veterinary surgeon's opinion as to the cause of death than they were formerly. It behoves us to keep abreast of the times so that when we are asked our opinion we may be able to give it in a manner profitable to the owner and creditable to ourselves.

Anthrax may attack any of the farm animals, but the symptoms exhibited by the different species of animals vary considerably; so does the period during which the animal shows signs of illness before death or recovery. I have been able to diagnose post-mortem the disease in cattle, sheep, and pigs, and have reason to believe that I have had to deal with an outbreak which affected the horse, dog, and ferret, as well as the bovine species and man.

In this country the disease is contracted by animals by the ingestion of food and water contaminated with anthrax bacilli or spores. There may be cases caused as in the human subject by inoculation, but have not come across one: though one has felt as if one stood in danger of being inoculated when dealing with an anthrax carcase out in the open in summertime and which appeared to have attracted all the flies and wasps in the neighbourhood. In passing I might mention that after trying various methods of getting rid of the pests one found the most effective was to sprinkle a little paraffin on the carcase and set a light to it. It only singed the hair of the carcase, but it did clear off the flies.

The way anthrax shows itself is usually by the sudden death of one of the bovines on the farm, and the number of deaths which follow are usually in proportion to the carelessness or ignorance shown in dealing with the carcase. I do not know of any reliable symptoms which are shown in anthrax which one could note on being called to attend a beast on a farm when there is no previous history to cause one to suspect the disease. Unfortunately, or perhaps fortunately, for one's own reputation I have not been called upon to diagnose anthrax in cattle whilst the animal was alive. Those to whom I have spoken who have seen affected animals alive state that there is great depression manifest at the outset. In one case the owner found a beast as he thought choking, he cut its throat and sent it to the butcher to be dressed; this was done, and the carcase sold for human food. The evidence that it had been suffering from anthrax being found in the fact, that soon afterwards the owner scratched his face with a thorn and rubbed it with his unwashed hand. He in due course developed malignant pustule. This led to enquiries being made which brought to light the fact that (as the

butcher put it) the beast had a big catcollop when it was dressed.

In pigs the symptoms are very diagnostic. They bury themselves in the straw, are very disinclined to move, if made to do so they simply go to another place and lie down there ; there is great swelling in the region of the throat and perhaps a little bloody discharge from the nostrils. If these animals are not interfered with a fair percentage will recover.

In horses. The symptoms are often those of colic and nothing more, but there may be a diffuse swelling about the throat with a gelatinous discharge from the nose.

Sheep appear to die very suddenly without any characteristic symptoms.

Slaughtering animals showing signs of disease. I have said that I had not been called upon to diagnose the disease in the living animal. This is hardly correct. I have been called upon to do it, and advise as to whether the beast was fit to slaughter for food or not, but fortunately the animals have always died before I could get there. It is an unfortunate fact, that with the majority of farmers it is the usual practice to slaughter all animals that have any condition on them, which show serious signs of illness and are evidently going to die ; in order to prevent total loss. The veterinary surgeon is often appealed to to say if he does not consider that an animal had better be dressed. If he says no and the animal dies he is blamed for preventing the owner from saving something In very few cases is it advisable to countenance the practice of slaughtering our patients for food, and certainly not in animals taken suddenly ill with an obscure disease, for should it be proved that the beast was suffering from anthrax and any accident occur to those who take part in the slaughtering, the veterinary surgeon would be the one most to blame and it might lead to serious consequences. I think that we should do all in our power to educate our clients to the dangers of this practice for their own good and that of the public at large.

Post-mortem Diagnosis of Anthrax is practically the most important work that we have in respect to this disease. The law only allows us one method by which we may do this, that is by microscopic examination of the blood, and it is I think right that it should be so, both on account of the danger to those who help to make the post-mortem examination and the spreading of the germs of the disease which is unavoidable when a carcase is opened.

Fortunately this is one of the easiest diseases to diagnose by microscopical examination and one of the simplest methods gives the most satisfactory results. The method is to stain a moderately thick film made on a slide with a one per cent. aqueous solution of methylene blue. This method, which Sir John M'Fadyean has done so much to popularise, not only shows us the bacilli but gives a diagnostic colour reaction. There is no discolouring to do, no agent to use to fix the stain, and there is not much searching to do to find the bacilli. The method, to state it shortly, is as follows :—1. Place a drop of blood from a superficial vein on a clean slide and spread it so as to make a moderately thick film. 2. Dry it in the air. 3. Fix it by lowering the slide on to the flame of a spirit lamp three times, or until it is uncomfortably hot for the hand ; allow the slide to cool. 4. Pour on to the film a one per cent. watery solution of methylene blue and let it stand for a minute or so. 5. Wash off the stain under the tap or with clean water. 6. Remove the water with filter paper. 7. Dry slowly and carefully high up over the flame 8. Mount in Canada balsam in Xylol. This method of staining is diagnostic.

On examining the stained film of anthrax blood with the microscope one finds that the bacilli are stained blue and here and there one comes across a leucocyte, the nucleus of which is stained a greenish-blue tint. Of course, there is nothing diagnostic in this. The diagnostic sign is seen in a violet or reddish-purple colour about the bacilli. The amount of this colour varies, but whether in large or small amount it is diagnostic as it is not found in blood of animals which have died from any other disease than anthrax or in blood that has gone putrid by exposure to the air. In the putrid blood from an anthrax carcase, although the anthrax bacilli may not be discernible, it is possible to get the violet colour up to three days after death has taken place. To get this reaction the procedure laid down must be followed out. It will not do to fix the film by sublimate, formalin, etc. The dry heat used in fixing the film must not be too high, 100° C. is sufficient. The film must not be too thin. The stain must not be applied to the hot slide or heated when on the slide. When this procedure has been carried out and the result mentioned has been obtained one's work as far as the diagnosis is concerned is finished, and the duty of the owner when the result is made known to him is to report it to the nearest constable. The matter is then in the hands of the Local Authority, whose duty it is to dispose of the carcase and disinfect the premises where the animal has died.

In connection with the post-mortem diagnosis there is the question of whether one can always expect to find the bacilli in the blood from a superficial vein in all animals which have died from anthrax provided the animal has not been dead long. The best way to answer this question is I believe to give extracts from an editorial article in the *Journal of Comparative Pathology and Therapeutics.* The writer, presumably Sir John M'Fadyean, says "With certain exceptions, in the domesticated animals, anthrax is a septicæmic disease, in which before death, the whole volume of blood becomes extensively invaded by the specific bacilli." . . . "As in this country the immense majority of cases of anthrax occur in the ox, it is naturally of most importance to know in what proportion these exceptional cases are to be met with in animals of that species. The opinion which we venture to express on the subject is that it is not at all certain that cattle ever die from anthrax before general invasion of the blood by the bacilli has taken place and that at any rate, if such cases do occur, they are of extraordinary rarity. . . . In the meantime the practice of pronouncing any case in the ox in which the fresh blood appears to be free from bacilli to be not anthrax appears to be justified. It can hardly be necessary to say what has been just stated does not apply to animals that have been slaughtered during the course of an attack of anthrax, for the general blood invasion takes place only a very short time before death when tha disease is allowed to run its natural course. Hence when an animal suffering from anthrax is killed, the bacilli may or may not be detectable by microscopic examination of the peripheral blood, although they would invariably be found if the examination were extended to the internal organs (an important point to remember). In this respect the sheep is in the same category with the ox.

"On the other hand, it is a well established fact that in the pig, failure to detect anthrax bacilli by microscopic examination of the blood leaves it quite possible that the case was nevertheless one of anthrax. Indeed in that species death occurs in a large proportion of cases while the blood is still free from the bacilli, or contains these in such small numbers as to make microscopic examination altogether unreliable as a means of diagnosis.

"In the horse also death from anthrax may occur while the bacilli are still sparsely represented in the blood, but in this species such an occurrence is much less frequent than in the pig. In the great majority of cases of anthrax in the horse, blood taken from any of the peripheral veins immediately after death contains the

bacilli in such numbers that there is no danger of their being overlooked, but on an average they are less numerous than in the ox, and their apparent absence on microscopic examination does not justify a decided opinion."

We now come to consider what is a very important question in every day practice. What is a practitioner to do when a client comes to him and says that he has had an animal die suddenly and wants his veterinary adviser to tell him what has been the cause of its death? If the client suspects anthrax it is his duty to report it to the police. But if there is nothing except the suddenness of the death to cause a suspicion of anthrax in the veterinary surgeon's mind, whether or not he is an Inspector for the Local Authority, and the owner of the animal comes and wants advice and does not wish to report, but is quite willing to if his veterinary adviser thinks it had better be done, how is the veterinary surgeon to act? Of course I am not a lawyer to advise on the law, but I think where common sense and discretion are used, one need not go far wrong. Animals die suddenly from many causes besides anthrax, and to say that every sudden death was a suspicious case of anthrax would be to my mind carrying the thing too far, especially in a country like ours where cases of the disease are few and far between.

But when one is called to investigate a case of sudden death it must be rather annoying if on opening the carcase one finds unmistakeable signs of anthrax. In these cases also self must be considered as well as the assistants, after being in too great a hurry to open a carcase one may have leisure to regret the haste. One is therefore impressed with this idea; that before opening the carcase of an animal which has died suddenly, it is better to make a microscopical examination of the blood and thus remove any suspicion that the animal has died from anthrax. When this practice is followed one cannot afterwards be blamed for carelessness. The question naturally follows—Does a microscopic examination of the blood for anthrax bacilli which gives a negative result entirely remove the suspicion of the animal having died from anthrax and justify the veterinary surgeon in making an ordinary post-mortem? What has been quoted previously should justify this procedure in the case of cattle and sheep. In the pig there are the throat lesions to warn one that he has a case of anthrax to deal with and probably there may be the history of these animals having been fed with the offal from some beast that has died under suspicious circumstances. Quoting the article I have already referred to, the writer says when on this subject: "Unfortunately in equine anthrax, the symptoms and circumstances connected with the case seldom do more than justify a strong suspicion as to the nature of the diseases, but in the majority of cases the bacilli will be readily discoverable in the blood by microscopical examination. We believe that the exceptions are so few as to justify the veterinary surgeon in proceeding to expose the internal organs when microscopical examination of the fresh blood has indicated that no anthrax bacilli are present in it."

I have acted on this principle for some time past and it has been most satisfactory. I wish I had kept a record of the post-mortem examinations I have made after examining the blood to remove the suspicion of anthrax, but unfortunately I have not. Once I made a post-mortem on what might be called a "suspected place," in the sense that vague rumours had been spread about cattle dying on the farm from something mysterious, and the police had thought it necessary to enquire into the matter. Afterwards a beast died and I was called in by the owner to advise him. I examined the blood of this particular animal, found it free from bacilli, after which I eviscerated the animal and found heart disease. The examination of the blood takes a very short time and one can do it on the place, therefore I think there is no excuse for not making it the first step in elucidating the cause of death.

How Anthrax is spread.—We all know that if an animal dies from the disease and the carcase is given to the pigs, or if pigs, get to an anthrax carcase and commence to feed off it, they are sure to get the disease. Also that to cut up a carcase on a pasture or in proximity to a pond is a most dangerous practice and that disease is spread by these means amongst the animals of the farm. But we would go further afield for our cause or causes, and try if we can discover how it comes to attack animals on our farms where there have been no cases for years and years, and perhaps only one animal is attacked and the disease ends. One cannot but think that there are various causes at work which carry the bacilli on the farms. For instance, there appears to be no doubt that anthrax germs may be carried to the animals on farms in the neighbourhood of works employed in the working of foreign hair, wool, and hides; by the trade effluents and dust from these works being spread on the pastures or contaminating the animals' water supply. This can only occur in manufacturing districts and the cases one has been accustomed to deal with have been far from anything of the kind.

We would therefore examine the different methods of husbandry and try if we can gain any insight by that means. We find that a tremendous quantity of various kinds of artificial manures are used; some of which are mineral and others of an organic nature; amongst the latter danger must lurk, for some of them are composed of blood or bones and others of refuse from the factories previously mentioned. When meadows and pastures are dressed with these substances there must be a great element of danger, and one can scarcely wonder at cases occurring when this practice has been followed. When the same has been used for growing roots then there must be some danger, but one has not met with any cases where the evidence pointed solely to this method of infection. One thinks that it is possible that the soil in this north country is not warm enough for the bacilli to grow and form spores freely, as they may do in a warm climate; because if it was, one would expect it to get extensively contaminated, when one considers what large quantities of organic artificial manures are used. Also if it were so contaminated we should get much more serious outbreaks than we do at present (they average less than two animals to each and those generally cattle). There appears to be something very peculiar in the reported cases in this country, namely, how few sheep are found to be affected; they are quite as susceptible as cattle, they get roots and cake the same as cattle, still we hear of very little anthrax amongst them. One hears of a lot of sheep being to dress for the butcher which are taken suddenly ill in the feeding folds. Perhaps if some of these were examined more anthrax cases might be brought to light. I said at the commeneement that one is liable to get into a biased way of looking into things. One must confess to a great deal on this subject and would like to be corrected if wrong. One's prejudice is most in favour of the idea that anthrax in this country is spread most largely by means of imported foreign foods and more particularly cotton cakes.

There appears to be ample proof that foreign feeding stuffs do arrive in this country in a contaminated condition, in fact, when one considers where they come from, one would expect them to be contaminated. An article from the pen of W. H. Dalrymple, Louisiana State University, U.S.A., *re* Anthrax, in *The Veterinary Record* of January 11th, 1908, shows how prevalent the disease is in the cotton growing country there. He says "During an extensive outbreak of anthrax in Louisiana some eleven years ago, the writer personally witnessed

on one cotton plantation as many as forty head of large mules suffering from carbuncular anthrax." He is writing on the spread of the disease by flies and states that they are there in myriads. In the States in the Lower Missisippi Valley, which includes the State of Louisiana, anthrax has caused the death of thousands of animals, as well as occurring in the carbuncular form in large numbers of other animals. Animals have been left to rot when they died, while others have been dragged into ponds and swamps thus spreading the infection in the district and thoroughly infecting the soil.

Again, is not anthrax one of the great scourges of Indian cattle? These being the countries from which we get large quantities of cotton seeds can we doubt that they are very liable to become contaminated before they reach our seed crushers' mills? We are told by the seed crushers that the seed is exposed to a heat of 180 F. before being made into cake, and that this should kill any germs of anthrax. Anthrax spores, it is well known, are very difficult to kill compared with other spores and bacilli. They are only killed after exposure of three hours to a dry heat of 140 C. or 284 F. Some spores can even resist steam at 100 C. or 212 F. for more than 12 minutes. One would therefore think that the spores which may contaminate any cotton seed imported into this country would be very little worse after exposure to the seed crusher's heat. Pasteur in his classic experiments heated soil from anthrax graves to 80 C. or 90 C. (186 F. or 194 F.) to kill microbes other than those of anthrax. After doing this he was able to produce anthrax in guinea-pigs by inoculating them with the soil so heated. Even if the cake is uncontaminated when it leaves the mills there is a possibility of it becoming so in railway trucks and boats, which may have carried hides, wool, manure, etc., as a cargo. This supposition is confirmed by the President of the Leeds Crushers' Association, who says that he has himself traced extensive outbreaks of anthrax which occurred in Scotland to Bombay cake which was carried in a vessel the previous cargo of which had been hides.

The number of cases which have fallen to our lot to investigate when cake of some kind has been used as part of the animals food, have made such an impression that I cannot but think that the disease is spread through the medium of cake. Here are tabulated the results. The table is not made up of selected outbreaks but of consecutive ones, or to be more exact, consecutive first outbreaks, which we have had to deal with. In drawing this up I have taken the first outbreak on the farm and left out the following ones on that farm, because in some cases the disease has been spread by the careless handling of the first case and other animals have died. The desire has been to try and get at the way the disease has been first brought on to the farm.

Analysis of 32 Outbreaks.

Bombay cake alone		10
"	and feed	2
"	and linseed cake	1
"	and Egyptian cotton cake	2
"	and shoddy manure in byre	1
		16
Egyptian cotton cake		2
"	and feed	1
"	Feed and linseed	1
Egyptian decorticated meal and linseed		1
Egyptian linseed cake		1
		6
Cotton cake alone		4
"	and feed	2
		6
Cotton cake until three days before death for three days feed		1

It will from the above analysis be seen that out of 32 cases, 29 of them had some kind of cotton cake. Of the other three:—

Bone meal and previous suspicious deaths	1
Shoddy manure used in byre	1
Arrived ill on the farm from market	1
	4
Total	32

In this table or list I have not tried to eliminate cases where organic artificial manures or any other suspicious cause might have been at work, but have taken what has been a most common suspicious factor to all.

In the report of the Board of Agriculture for the year 1907, recently published, the Chief Veterinary Officer finds that after the careful elimination of other causes the evidence pointed to artificial feeding stuffs or manures in 65½ per cent. of confirmed cases while in 37 per cent. there was no history of former outbreaks nor of artificial feeding stuffs or manures.

The number of samples of cake tested by the Board for anthrax germs by means of feeding animals or by inoculating others with emulsions of suspected materials was 58, but no positive results were obtained. In support of the theory that anthrax is spread by foreign food, we may just notice the case of Lord Brougham *v.* Messrs. Pattinson and Winter. In this case the plaintiff claimed damages for the loss of six valuable shorthorn cattle which, it was alleged, were infected with anthrax by means of linseed cake purchased from the defendants. Prof. M'Fadyean proved finding anthrax bacilli in the cake. The jury found a verdict for the plaintiff and judgment was given for £304 13s. 6d.

In *The Veterinary Record* Prof. Dunstan records six experiments with cotton cakes. Three of the six were found to be infected with anthrax. Prof. Delépine gives it as his opinion that the chief cause of the spread of infection in a locality seems to be the concealment or overlooking of cases of anthrax. He gives this against the cake theory, because he has examined a great many samples of cake and been unable to find anthrax in them. Also he has come across cases of anthrax in the human subject which has led to the discovery of unreported cases of the diseases in cattle. The sufferers having contracted the disease in handling anthrax carcases. In the case of Lord Brougham's it was proved that the interior of the cake contained numerous living germs. This was cited to show that the process of manufacture did not sterilise the seed. Therefore if the seed is not sterilised in the process of manufacture by the heat used and it has been contaminated either on the plantation where it was grown or during its journey from there to the seed crusher's mills, it will still contain living anthrax spores when it reaches the farmer's hands.

The disposal of Anthrax Carcases and Disinfection. In the disposal of anthrax carcases, the law allows different methods to be adopted, they can either be buried and covered with lime, burnt or destroyed by chemical agents. That proper burial is efficient there can be no doubt, but one greatly prefers cremation. The process is easy to carry out and when the carcase is consumed by fire there can be no doubt about the infection being destroyed. The Anthrax Order prescribes very explicitly how buildings, etc., should be disinfected in which a case of the disease has occurred, but leaves to the discretion of the veterinary inspector in a great measure the disinfection of the manure. This is not always a satisfactory question to settle, especially when

an animal has died in a large fold yard which at the time is several feet deep in good manure. If there happens to be only a small quantity of manure and that fairly dry it can be easily disposed of by burning in the same place as the carcase. It has been done by covering it with lime and carting out, also mixing a large quantity of lime with the manure in a heap. This method does not find favour with our advanced agriculturists because it depreciates the manurial value. The practice is also expensive, what with the cost of the lime and the cartage of the lime. To meet this difficulty I have introduced the use of formalin or formaldehyde. A one per cent. solution has been found to be thoroughly effective when used for the same purpose on wood. Therefore as the price is not exorbitant, one thinks that it should prove useful for one's needs. Formalin can be used as a dressing for seed corn to prevent fungoid disease of the subsequent crop, therefore should not prove injurious to crops when mixed with the manure.

The mode of application should be as follows:—Thoroughly sprinkle the surface of the manure to be disinfected with a one per cent. solution by means of watering cans or a hose fitted with a rose. Allow it to soak in, and cart out the manure to the depth of one foot and lead it into a heap to let the solution soak the whole mass. Give the exposed surface another sprinkling, after which the cattle may be allowed in again. One has found that a gallon to each superficial square yard gives a good dressing. The formaldehyde can be bought for 5s. or less per gallon so that a fold yard full of manure with an area of 400 square yards can be dressed for £2 in material by a method which is much pleasanter to work than quicklime, which should prove more efficacious and cause a considerable saving in the value of the manure treated. (Eight gallons make 800 gallons of liquid disinfectant which will sprinkle 400 yards twice over).

Prevention. With regard to prevention of anthrax one thinks that there is scope for a great deal of investigation before very explicit rules can be laid down. By that one means that the methods by which it is spread should be thoroughly investigated and one would expect that the unravelling of the question would direct what lines should be followed. We are very greatly indebted to Pasteur for the classic researches which he carried out. The methods of vaccination followed in other countries with hotter climates than ours where they have much more serious outbreaks than we have; because the disease appears to be indigenous to the soil do not appeal to us for this reason, that the outbreaks in this country are limited to small numbers of animals, the average being under two in each. Therefore as there appears to be a certain amount of risk in practising vaccination it makes one think that it as well to take the risk of infection rather than that of artificial inoculation. At present one would advocate that all manure made from animal products should be sterilised in the process of manufacture. That foreign seeds should be subjected to some process which would destroy the germs of the disease. That railway trucks and vessels which are used to convey cattle food should be cleansed and disinfected. For does it not appear to be a dangerous thing for cattle food to be conveyed in trucks and vessels which have conveyed hides, wool, raw bones, etc. There is another proposal which would be of great use and that is that the deaths of all animals which die suddenly should be investigated by a veterinary surgeon. If it were done there is no doubt that a great of useful information would come to light. The responsibility of reporting contagious diseases could then be put on the veterinarian, and one is of opinion that a number of serious outbreaks of contagious disease would thus be prevented. Also a large quantity of diseased meat could be prevented from being sold for human food.

Conclusion. In drawing this paper to a close I must confess that the subject could have been dealt with in a very different manner, the bacilli, its growth and development; the different methods of staining it; also cultural methods, etc., but these one thinks are of more interest to the workers in the laboratory than to the workers in the field, consequently they have been omitted, and one has tried to deal with it from a country practitioner's point of view. It may be that this has led to a biased and egotistical paper; if too much so, may the discussion correct the errors and help one to a better understanding of the subject. If it does so, I shall feel amply repaid for the time spent in putting these notes together.

Discussion.

Mr. Wilson (President) congratulated Mr. Pratt on the excellence of the paper he had just delivered, and invited the members present to take part in the discussion.

Mr. Snaith thought that the paper was very complete and that he could add very little to it. He was driving past a farmyard one day when he was hailed by the Sanitary Inspector who asked him to look at a carcase which had been there a week and parts of it were laid about all over the place. It was that of a beast which had died from either black leg or anthrax, and it was reported to the County Inspector who concluded that it was a case of quarter-ill. He should like to thank the essayist for his paper.

Mr. Taylor also thanked Mr. Pratt for the trouble he had taken and for the very able paper he had read to them that evening. He had recently been called to a beast ill and found it lying on the ground kicking its abdomen with its hind legs—pulseless. Temp. 104 F. It was slaughtered and post-mortem revealed an enlarged spleen, and on examining blood through the microscope it was found to be a case of anthrax.

Mr. Dobbing desired to add his thanks to the reader of the paper who had evidently studied the subject very closely. He remembered hearing of a firm who purchased a cargo of oats in London and as they had several depôts, outbreaks of anthrax occurred at several places, and the oats being suspected, a solution was obtained by soaking them in water, and guinea pigs were fed with the solution and direct proof was obtained by these means. He remembered some cows being affected with it and swellings of the throat occurred, and a man he knew contracted the disease from them in the shape of a carbuncle and it was cut out by a local doctor, and the man recovered and was perfectly well afterwards.

Mr. Hill thanked Mr. Pratt also, and mentioned having been called to an outbreak amongst the dogs in connection with the Harworth Hunt through the consumption of the carcase of a cow. The puppies were the worst affected. Parts of their faces were swollen up and the greater part of them affected in this way died.

Mr. Blackburn said he believed that what Mr. Pratt does not know about anthrax, is not worth knowing, and was glad he had given them the benefit of his experience. He had seen anthrax in the living animal, but did not recognise it at the time. There were rigors—high temperature, and dung was blood tinged. One was often placed in a peculiar position through having no microscope at hand at the time when one was called in, and being some distance away one was expected to give an opinion there and then, which was not a very easy matter. He mentioned that a man had his best cow taken ill in the morning, a drench was given, she died at night. The carcase was removed and the butcher who skinned it cut his arm and had to undergo treatment in consequence. After this a pony died and it was diagnosed to be anthrax by the veterinary inspector who was called in.

UMI

The SECRETARY had been called to several outbreaks, in one he found a beast had died, and the pigs were affected with swellings around the throat and the cur dog was also affected through partaking of the carcase. In another a cow had died and he found three or four more with rigors and high temperatures which ultimately subsided, but the man who skinned the first carcase developed a pustule on his arm. The cause of this was believed to be due to feeding on Bombay cake which he regarded as dangerous on account of its dirty condition.

He then proposed a hearty vote of thanks to Mr Pratt for his valuable paper, and also for his kindness in exhibing slides and microscopes showing the bacilli of anthrax, malignant œdema, and putrefactive organisms. This was seconded by the President and carried with acclamation.

Mr. PRATT having replied, the members then had tea together in the hotel. W. AWDE, Hon. Sec.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

The quarterly meeting was held at the Grand Hotel, Manchester, on the 10th September. the President, E. H. Stent, Esq., Manchester, in the chair, and the attend- included Messrs. W. Woods, A. Munro, Dobie, E. Wood, Gubbin, Lomas, Ferguson, Wilson, J. H. Carter, Giblin, Hughes, Norbury, G. H. Locke, Harrison, and W. A. Taylor.

Visitors : Messrs. Blackwell, Mattinson, and Atkinson.

Apologies for absence were received from Sir John M'Fadyean, Messrs. Sumner, McKinna, S. Locke, J. B. Wolstenholme, Packman, A. Lawson, Faulkner.

The minutes of the last quarterly meeting were taken as read, on the proposal of Mr. Woods, seconded by Mr. Hughes.

The minutes of a meeting of the Council held on May 13th, 1908, were read by the Secretary and accepted, the proposer and seconder being Mr. Woods and Mr. Giblin respectively.

Acknowledgments of the resolution passed by the Association respecting the eradication of Tuberculosis were submitted from the Local Government Board, the Board of Agriculture, and the Royal College of Veterinary Surgeons.

ELECTIONS AND NOMINATIONS.

Mr. F. A. BALL, M.R.C.V.S., Ormskirk, and Mr. A. WALKER, M.R.C.V.S., Liverpool, were unanimously elected members of the Association.

Mr. A. B. MATTINSON, Preston, and Mr. T. S. ATKINSON Douglas, were nominated for membership by Mr. G. H. Locke, and Mr. Stent in the order given.

ROYAL INSTITUTE OF PUBLIC HEALTH CONGRESS AT BUXTON.—Report by Mr. E. H. STENT.

The Veterinary Section in connection with the above was opened on Tuesday, July 21st, Prof. Penberthy postponing his address until the following day.

The proceedings commenced with a paper on "Bovine Tuberculosis and its Eradication," by Mr. de Vine, M.R.C.V.S., of the City of Birmingham, which dealt with its prevalence, cause, and mode of infection, methods of spread, and diagnosis by the use of tuberculin, by bacteriological methods, and by inoculation. The necessity of eradication was evident from the report of the Royal Commission, which gave a number of cases of tuberculosis in children directly of bovine origin. From the agriculturists' point of view the great loss in their stock, and the excess of food required for keeping up the condition of infected animals. His methods of eradication would be mostly on the lines adopted by Prof. Bang. He suggested compulsory notification of clinically affected animals, and compensation. Veterinary inspection and tuberculin to be supplied by the local authorities who would also pay half market value per head on all animals compulsorily slaughtered, but no animal should be valued over £8 or under £4. Unless some such inducement were offered to cattle owners diseased meat and milk of clinically diseased cattle would be smuggled through and sold for human food.

Mr. James Gregg, M.R.C.V.S., Belfast, was unable to be present, his paper "How to Prevent the Transmission of Tuberculosis to Man through Cow's Milk," being read by Mr. Howe. Much of the ground in his paper had been covered by Mr. de Vine, and his methods of eradication would be on similar lines.

On the second day, Mr. Brittlebank read his paper on "Veterinary Inspection under the Milk Clauses," followed by Mr. J. S. Lloyd with one on "The Qualifications of a Meat Inspector," both being subjects which members of this Society have discussed at previous meetings.

Prof. Woodruff gave an interesting paper on "Anthrax and Glanders as communicable to Man."

On the third day the Veterinary Section joined with the Preventive Medicine Section and discussed the papers on Tuberculosis. This produced a good discussion.

Mr. Sadler, representing the Cheshire Dairy Farmers' Association, said : If the public are to be protected the farmer must have compensation. If the Govenrment could give 5s. per week to dying people surely they could give a little to save those just beginning life. He considered too much was made of the "infant mortality due to tuberculosed milk," and that it was more the want of sufficient milk that caused it.

Prof. Penberthy gave great credit to Manchester Authorities for the successful manner in which they had tackled the question, and said what was necessary was a uniformiiy of the Dairies Order.

Mr, Brittlebank considered the Government of this country should advance loans to tackle the better housing of cattle and that a definite public health veterinary service should be established.

Dr. Marsden (chairman) considered 600 feet ample air space in shippons for each cow, if more the animal would get cold. He considered, in regard to compensation, that the proportion of risk should be equally taken by the farmer, butcher, and public funds. Out of the thousands of animals slaughtered at Birkenhead not more than 200 were confiscated yearly, but he did not mention that these were all American cattle, and did not include milch cows.

Dr. Fraser's mode of eradication would be to proceed gradually. Firstly remove all cattle with affected udders, later the infective cows (with compensation) and by infective ones he meant those that discharge bacilli.

This concluded the business portion of the Congress, after which, we were entertained by Mr. and Mrs. Brittans at their model farm, and inspected the horses from several stud farms, altogether spending a very enjoyable afternoon in the beautiful grounds of Orient Lodge.

Mr, G. H. LOCKE presented copies of the papers read on the day he attended the Congress, viz., "The Qualification of a Meat Inspector," by Mr. J. S. Lloyd, F.R.C.V.S., Sheffield, and "Anthrax and Glanders," by Prof. Woodruffe, London. He confessed to some disappointment with the discussion arising out of these papers.

Mr. Woods proposed and Mr. Gubbin seconded a vote of thanks to the delegates, and it was resolved that the expense incurred by them in attending the Congress should be defrayed by the Association—proposed by Mr. Gubbin and seconded by Mr. Carter.

Mr. Stent and Mr. G. H. Locke returned thanks.

UMI

JOINT-EVIL IN FOALS.

By R. Hughes, F.R.C.V.S., Oswestry.

In response to our worthy President's request at somewhat short notice to submit a paper on "Joint Evil in Foals," for discussion at this meeting, I have consented to do so from a sense of duty as a humble member of this Association, and not from a feeling that I have any special knowledge to warrant his selecting me for the honour, or that I have anything new or original to communicate, still I hope the few observations that I shall make will elicit a lively discussion, and add to the limited knowledge at the present day prevailing in regard to this baneful disease in all stock rearing districts.

Joint-Evil—variously known as "Specific Polyarthritis," "Omphalo-phlebitis," "Navel-ill," "Limping," and other colloquial terms is a disease, that develops metastatically from a septic infection of the navel wound, as the result of improper attention to the navel, the dam, or the foaling-box.

Probably the loss to breeders from this disease is second only to contagious abortion, and the wonder is that it has not attracted greater attention from those engaged in pathological research.

Etiology—It would appear from recent research respecting the causation of this disease, (by Shonle and Ostertag) that it is due to infection of the navel wound, and from thence a general infection of the body, and that the pyogenic organisms responsible are the common ones, viz. the staphylococcus pyogenes aureus and the streptococcus pyogenes.

Lesions—On post-mortem examinations one finds lesions of a suppurative, sero-purulent, or sero-fibrinous polyarthritis, in addition to changes characteristic of pyaemic processes (pyaemic forms) in other cases the changes are more typical of septicæmia (septic form).

"When the navel wound is not already healed it shows traces of inflammation and suppuration, the umbilical cord and tissues surrounding the umbilicus are swollen, the margins of the umbilical ring present ulcerative thickenings, abscess formation has taken place within the umbilical ring, and drops of pus may be pressed out of the umbilical opening. In addition to this omphalitis, which may also heal so that it presents no external symptoms of disease, there exists in the deeper tissues a suppurative thrombo-phlebitis, and thrombo-arteritis, with thrombosis of the portal vein and its hepatic branches. The synovial membranes of the joints are injected, swollen, and thickened, the fluids of the joints are cloudy, increased in amount, mixed with flocculent coagulum, and are often purely suppurative in character (empyema of the joint). The articular cartilages undergo ulcerative degeneration, and at times the bone itself becomes necrotic, occasionally the joint capsules are perforated, and suppuration may extend into the bones.

Abscesses form between the muscles and tendons in the vicinity of the joint, as often seen in the carpal and tarsal articulations. In addition post-mortem examination may reveal metastatic foci in all the organs, especially the liver, lungs, brain, and kidneys, in the muscles and subcutaneous cellular tissues.

The following diseases have also been observed, viz. pleuritis, endocarditis, pericarditis, broncho-pneumonia, inflammation of the tendon sheath, peritonitis, cystitis, and general inflammation of the structures of the eye."

Symptoms—Usually symptoms of systemic disturbance a day or two, or more, precede the appearance of the articular affection, such as fever, (104°—106°) or more, dullness or lassitude, disinclination to move, and disorder of the digestive functions, and the young animal is indifferent about sucking. Stiffness of one or more limbs suddenly appears, quickly followed by lameness, and the joints most frequently attacked are the knee, and hock, also the stifle, elbow, shoulder and fetlocks are not infrequently affected. Shortly there appears a swelling of the affected joint (or joints), which is hot, tense, and very painful, and the patient assumes the recumbent position in order to relieve the affected limb. At first constipation is noticed, and is followed by a diarrhœa of an offensive character, and these conditions of the bowels alternate. If relief is not quickly secured the animal rapidly becomes emaciated and debilitated, and according to the course of metastasis generalised pyæmia or septicæmia will ensue.

The course of the disease is generally acute, lasting from one to three weeks, though it may prove fatal in a few days.

Diagnosis.—The animal being affected with the foregoing symptoms within a few days of birth the navel should be carefully examined, when a moist or weeping condition of the part is generally observable, and although infection is acknowledged to take place at the time of, or immediately following birth, I believe it is capable of taking place at any time up to the complete drying and cicatrisation of the navel, hence the reason for the disease sometimes manifesting itself when the foal is three weeks or a month old. This condition of the navel associated with fever, sudden onset, lack of evidence of direct injury to the affected joint, and no history of a previous disease or accident to the animal, warrants the practitioner in confidently concluding the case is one of joint evil.

Treatment.—This being an infectious disease the treatment naturally divides itself into Prophylactic and Therapeutic, and much greater success is ensured by the former, which accordingly merits prior consideration.

Prophylaxis.—The foaling box should have a good impervious floor capable of being thoroughly cleansed and disinfected, and hygienic in its construction. This being carefully prepared by rigorous disinfection—for which purpose scrubbing with hot water following by the application of freshly prepared quicklime, or solution of copper sulphate (2-5 per cent.), or carbolic acid may be employed—and afterwards the loose-box should be littered with clean wheat or oat straw, frequently renewed.

The brood mare should be kept in thoroughly healthy condition, not overfed and pampered, but have a laxative and nutritious diet, and enjoy freedom for natural exercise or reasonable or suitable work, which is conducive to the development of strong and healthy progeny. As soon as the earliest symptoms of parturition are manifested the external genitals, tail, thighs, and udders should be well washed with soap and water, and disinfected with lysol or boric acid, or thymol (non-irritant disinfectants). The attendant should also be scrupulously clean as regards his hands and clothing.

The foal should receive immediate and careful attention, and if possibly be received upon clean dry straw, or a clean sheet or tarpaulin, and kept on such bedding until he is dried and able to stand. If the navel string is not already broken it should be severed between a double ligature at a distance of ¾ inch. from the abdominal wall, and if broken, ligatured and excised at that length. Afterwards the umbilical region should be thoroughly washed and a suitable antiseptic dressing applied, such as ½ per cent. solution of Biniodide or Perchloride of mercury, or 5 per cent. Carbolic acid, or Boric powder, or the part after drying may be painted with Collodion containing an antiseptic, and assiduous attention should be continued until cicatrisation is complete.

Should the foal not receive this attention at birth, or a pervious urachus be discovered, suitable treatment should as quickly as practicable be applied, as such a condition is favourable to infection. The best means to adopt is to place the animal in the recumbent position, clip off the hair, wash and disinfect the part, inject the

urachus with a weak iodine solution, and cauterise the orifice and stump of the cord with undiluted carbolic acid, lysol, or creosote.

Therapeutics.—As previously stated, much greater success can be ensured by rigid attention to prophylaxis than by the adoption of therapeutic measures.

Once the case is diagnosed the foregoing instructions with regard to the navel should be carefully carried out. The animal should be placed with its dam in a good loose box, previously cleansed and well bedded with clean short straw. The dam should be liberally fed so as to supply the patient with ample nourishment throughout the illness, and all the requirements of good nursing should be observed, including clothing to the body and bandages to the legs if deemed necessary.

With regard to internal remedies, I have had my best results with Quinine, Sodium sulphate, Hypo-sulphite and Alcohol, and after acute febrile stage Biniodide of. mercury and Potassium iodide.

Local treatment to the affected joints: Early inunction with Belladonna ointment (1 to 9), or Camphorated oil (1 to 4), with which a little Extract of belladonna has been incorporated, and wrap the affected joint up in cotton wool and dry bandages. This I find far preferable to fomentation or warm compresses in the early stages.

Once there is evidence of empyema of the joint the case has assumed a very grave aspect, and surgical interference should be immediately resorted to, viz., providing a free exit for the pus at the most favourable point for drainage, and the general rules for the treatment of an open joint are to be rigorously observed.

When the case has arrived at this stage, viz., empyema of the affected joint, there is little ground for hopes of a perfect recovery, but I believe that it is more in keeping with scientific treatment to provide an early exit for the pus, than to allow it to burst the synovial capsule at the point of least resistance, and then infect the tissues surrounding the part.

Discussion.

The President expressed satisfaction with the paper. Joint-evil in foals was, he said, a complaint which most practitioners in country districts had to deal with, and as a town practitioner he had not much experience of it.

Mr. Carter, referring to the giving of medicine to foals said he always considered this risky, and he should like to know Mr. Hughes' experience on the point.

Mr. Munro referred to the treatment mentioned in *The Veterinary Record* of intra-tracheal injection of iodine, and wished to know if members had tried it. Also had perchloride of mercury been tried.

Mr. Ferguson said he tried the first mentioned treatment, but without success.

Mr. Wood had tried it with success.

Mr. Dobie asked if Mr. Hughes had tried a ligature on the urachus.

Mr. Atkinson looked upon the matter as one for preventive treatment, and in his experience attempts to cure the evil were not worth the trouble. He should be interested to know what the mortality amongst foals was from joint-evil. It was probably enormous, and there must be large numbers of foals die from it that veterinary surgeons heard nothing of. He considered it to be purely a question of sanitary precaution and a matter quite as serious to the agriculturist as that of tuberculosis in cattle. When joint-evil in foals occurred on a farm it was, in his opinion, proof that the farm buildings required attention. He attributed the shortage of horses in part to this trouble. As to the mortality the only correct record he had seen was in an article in *The Journal of Comparative Pathology*, in Germany, where it was stated that 75 per cent. of foals died of the disease. It had been stopped there by preventive measures and by paying strict attention to the navel. He thought very few made good recoveries. On large farms the animals were well looked after, but the average farmer could not be relied on to carry out the treatment.

Mr. Munro: The better farmers get more cases!

Mr. Atkinson: Probably all those cases were seen, but there may be hundreds on poor farms that were never heard of.

Mr. Harrison referred to a recent case where the hock was bad, and which eventually commenced to discharge. Whilst doing so it was turned out into a field with the mare, and he wondered whether this would be a probable source of infection to other animals turned on the land.

Mr. Giblin, speaking in regard to antiseptic precautions, said that often insufficient attention was paid by the farmer to the disinfection of his hands before treating the foal. Some years ago there was an injection of a solution of formalin advised as a treatment. Was there any experience as to this?

Mr. Gubbin remarked that after hearing the discussion it had occurred to him that perhaps less would be heard of the disease if the mares were turned out to foal rather than foal inside.

Mr. Woods said his assistant had tried the new treatment but unsuccessfully. He considered the disease to be an unsatisfactory one to treat, and had not seen a case recover where there had been suppuration in the joint. He had tried every treatment mentioned because his own was not satisfactory, but had come back to it, namely, iodide of potassium and bi-carbonate of soda. In his experience it had been the foals of March and April that had been most subject to the disease, before the animals could be turned out to grass, and he wondered whether the boxes wanted more cleaning out than a foal box usually gets. As soon as he could get foals out to grass he did so because they appeared to do better, particularly if the weather was warm and dry.

There was no doubt that the cause of the evil is an organism that required explaining, an organism which he considered could live twelve months. When a box became infected the farmer should be instructed not to use it again for twelve months. There should be thorough disinfection, especially of the floor and walls, and it was his custom to put two or three inches of chloride of lime on the floor of the box and leave it there for a week. The treatment of the disease that seemed most hopeful was a serum treatment. This was a question for the bacteriologist to take up more than anyone else.

The President said his experience had generally been with two or three year old animals having partially recovered and having swollen joints. He also believed that rigorous disinfection was required, including the hands of the operator.

Mr. Hughes, in reply, said that practising as he did in an important horse breeding district, he directed his attention to the mortality amongst foals. In the literature on the subject some authorities declared that joint-evil is capable of taking a short course, but he was inclined to dispute that, because the chief cause of mortality in foals during the first 48 hours of their existence is the retention of the meconium, and not joint-evil as supposed by owners and referred to by some of the speakers. There was no question about its being a preventable disease and the prophylactic treatment is the one to adopt. He thought it was certainly due to navel infection, as this region is the part that becomes soiled the earliest. As to the majority of cases being amongst early foals he quite agreed, and he accounted for it largely through the foaling box not having received proper attention. This should have an impervious floor capable of thorough disinfection, and should be washed thoroughly with hot water, or better still with crude carbolic acid, or copper sulphate added, afterwards

throwing on freshly prepared quicklime, opening the door and getting as much fresh air as possible.

In the early spring mares are dirtier and if one has a mare that has any discharge of a purulent nature from the genitals, that is capable of infecting the foal.

They were more successful after preventive treatment than when infection had taken place; and it was his universal custom to have a bottle of antiseptic ready, viz., bichloride or biniodide of mercury (3-4 grains to the ounce), and dipped in that he put a piece of silk or twine with which to tie the navel about three quarters of an inch from the umbilical opening. He also gave strict orders as to the cleanliness of the men's hands and clothing when infection had been introduced on the farm. In preventive treatment he could not lay too much stress upon disinfection previous to foaling, and at the time of birth.

As to the administration of medicine to young foals he had no difficulty, did not consider it dangerous, and had had no accidents in so doing. He failed to see any advantage in intra-tracheal injection of iodine when the drug could easily be administered by the mouth. As soon as the febrile stage was over, he had had very satisfactory results from biniodide of mercury, and gave a foal from one to two grains of biniodide of mercury and about five grains of potassium iodide daily. After this treatment there was not so much thickening of the joints. As to a recurrence of the disease he thought there was a possibility if the animal had not properly recovered. He would be sorry to lead them to believe that he had a specific in regard to the disease, but at the same time he found that quite a number of foals had recovered when treated early, and where the sanitary surroundings were favourable. He expressed surprise that an anti-toxin had not been discovered for this disease such as diphtheria.

The President proposed and Mr Munro seconded a vote of thanks to Mr. Hughes for his paper. This was carried unanimously.

AN OUTBREAK OF CEREBRO-SPINAL MENINGITIS IN DOGS.—By Mr. E. H. STENT, M.R.C.V.S., Manchester.

On December 31st last year I was called to see four fox-terrier bitches supposed to be suffering with rheumatism and for which their owner had been treating them with Sodii sal.

The symptoms commenced in each bitch about a week after whelping, and were stiffness in gait, grunting on being touched, later, inability to rise, with rapid abdominal breathing. Appetite normal. This condition of things had been going on for six weeks in one bitch, five in another, three in the third, and the fourth was commencing when I first saw them.

I was informed by the owner that No. 1 was much improved, No. 2 better, but the lower half of ribs were in a twisted condition, and there was short painful breathing, No 3 much pain on lifting around chest, short abdominal breathing and prominent knuckle on lower third of all ribs. No. 4 had whelped a fortnight when I saw her. She was lying on her side unable to rise, grunting with each breath. Temperature 103. Appetite normal. On placing her on her feet could stand, but was afraid to move, when started would walk quickly with very short steps. On moving her head to right the tail would curl to the left and *vice versa*, on raising head suddenly would collapse. Only slight congestion of conjunctiva, condition of pupil normal, very rapid abdominal breathing; lower half of ribs on each side were drawn in to such an extent that they almost touched. No. 3 not being of much value was destroyed, and forwarded to Professor Williams who made the post-mortem examination. The coverings of the whole of the brain and spinal chord were intensely inflamed, the ribs and spinal column showed a remarkable condition of softened bones.

The fact that each bitch had commenced in this manner soon after whelping convinced me that some septic organism had gained entrance to the system per the uterus, therefore the treatment I adopted was on antiseptic lines, viz., irrigation of the uterus with corrosive sublimate, 1 in 2,000, and gave Pot. iodi. and Bin. iodi internally, I applied an iodine preparation to the neck and gave special nourishment. After seeing the condition of the bones in No. 3 bitch I gave the others Phosphate of calcium for a time with benefit, I think. In a week there was marked improvement, so I changed to Easton's syrup, and in another three weeks all had recovered except that the knuckle remained on the ribs. I had the boxes burnt, kennels washed for several days with boiling water containing corrosive sublimate, and advised that no more bitches should whelp in these kennels for a time, but owing to circumstances two more bitches whelped last May without contracting the disease.

On August 16th last I was again called to two bitches that had whelped in the same kennels ten days previously. They exhibited the same symptoms as before, except that the condition of the ribs was not so marked. One of these bitches had had a previous attack. The fact of two having whelped last May without any return of the disease, and three months later for others to commence with it, seems to me to point to some sporing organism being the cause, the spores of which had not been destroyed by the disinfectants. This is the point on which I shall be glad to have your opinions.

Mr. Stent explained that the foregoing report was not quite complete as he was awaiting a report from the Liverpool University on some cultures made in connection with the cases. No further discussion therefore took place on the subject.

PATHOLOGICAL SPECIMENS AND INTERESTING CASES.

The PRESIDENT submitted three calculi taken from the bladder of a Schipperke bitch. He conducted abdominal section. The bitch was alive and well. He brought forward the case because in his practice he got more cases of bladder trouble amongst this class of dog than in any other.

Mr. CARTER produced a halfpenny which had been swallowed by a small Scotch terrier bitch brought to him. The halfpenny had been passed naturally about a month later.

Another case brought to him was that of a small terrier, on account of evincing great pain in evacuation. He discovered by digital exploration two nails about ¾-inch in length, and a pearl bead. These were produced for inspection.

Mr. CARTER also submitted a hat pin nine inches long, without the head, which had been taken from the neck of a collie pup about twelve pounds in weight. The dog is still alive.

A hearty vote of thanks was given to Mr. Stent and Mr. Carter for their specimens, proposed by Mr. Locke, seconded by Mr. Harrison.

Mr. TAYLOR enquired as to whether the Association had taken action with regard to the memorial to be raised in honour of their late friend, Mr. Wragg, of London. He wished to move that the Standing Committee be requested to consider the matter and report to the next meeting of the Society.

Mr. CARTER seconded.

Mr. HUGHES drew attention to the fact that the National Veterinary Association had decided to bring this matter forward and invite as many members as possible to join. Would it not be well to wait until they had met.

Mr. TAYLOR was aware of this, but moved his proposal to save time. He wished the Society as a body to lend support and countenance to the object in view.

The resolution was adopted.

UMI

GLANDERS: A CLINICAL TREATISE.—By WILLIAM HUNTING, F.R.C.V.S. Demy quarto, cloth, lettered, 100 pp. with 14 coloured plates and 3 monochromes, 10/6 net. London: H. & W. Brown, 20 Fulham Road, London, S.W.

In the above book we have presented to us the cream of the author's life-long experience in a disease he has essentially made his own.

Nowhere could glanders be better studied than in this vast metropolis, and Mr. Hunting has made full use of his opportunities, backed up by his acute clinical perception, and the exactitude enforced by 600 post-mortem examinations of this disease annually.

In his preface the author tells us that his object in publishing this clinical monograph was to provide those whose experience is small with such information as may assist them to detect and suppress the disease should they meet with it.

In this he has fully succeeded; those of us who can go back a generation, and are able to compare the information of to-day with that of some years ago, will envy the young practitioner the mass of exact information now at his service. It is interesting to note that this exactitude has been largely secured by the use of the "brass tube and glass tube" the value of which so many actively engaged in clinical work have been wont to belittle.

Mr. Hunting's position as an authority on glanders is indisputable. Both in and out of season, month by month, and year by year, has he deplored the lack or inefficiency of legislation; recognising that legislation can never be in advance of public opinion he has endeavoured to educate it. His fight, indeed, against glanders has been heroic, and is one of the debts his profession will ever owe to him.

The book before us deals with the clinical aspect and suppression of the disease, and these necessitate a consideration of the distribution, prevalence, nature, symptoms, diagnosis, and post-mortem appearance of glanders, while at the same time mallein and its action, preventive and legislative measures are fully dealt with. There is nothing superfluous, not a word can be missed; the statistical tables are of great interest, while amid so much which is excellent, we cannot refrain from especially noticing the section on mallein and the interpretation of its results.

To Mr. Hunting the medical profession is indebted for drawing attention to the many unrecognised cases of glanders in man; he tells us he has very little doubt that there are ten times as many human deaths from glanders as have been accredited to that cause by the Registrar-General. On this point the author is most insistent, and by a curious coincidence, as if supporting his contention, we may note that within a month of the date of publication of his book, no less than three inquests were held in London on glandered men.

If the text is a mine of clinical wealth, the photographic and coloured plates, the latter fourteen in number, by Mr. S. A. Sewell, are examples of the highest artistic talent. Nothing like them has ever previously been attempted in connection with glanders. To the present generation they indicate in the most natural manner what many men never have seen, while to posterity it is an exact record of a loathsome disease which in time will be as dead in these islands as pleuro-pneumonia or rabies.

The publisher is to be congratulated on his share of the work—good paper, fine print and admirable binding combine to make a handsome volume.

S.

DISEASES OF ANIMALS ACTS 1894 TO 1903. SUMMARY OF RETURNS.

Period.		Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy)		Rabies. Cases Confirmed.		Sheep Scab.	Swine Fever.	
		Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Dogs.	Other	Out-breaks	Out-breaks.	Slaughtered *
GT. BRITAIN. Week ended Sept. 26		17	22			16	37			4	41	260
Corresponding week in	1907 ..	22	24			12	29			1	35	170
	1906 ..	14	15			24	45			..	17	129
	1905 ..	25	34			27	45			4	13	38
Total for 39 weeks, 1908		828	1094	3	112	631	1919			647	1593	9400
Corresponding period in	1907 ..	828	1094			667	1525			421	1961	9212
	1906 ..	671	972			825	1549			307	848	4809
	1905 ..	741	1027			947	1632			676	643	2908
Board of Agriculture and Fisheries, Sept. 29, 1908.												
IRELAND. Week ended Sept. 19		1	1	..	..	..	..	..	..	..	1	163
Corresponding Week in	1907 ..	..	..	..	..	..	..	..	..	3	2	74
	1906 ..	..	..	..	..	..	..	..	..	3	1	26
	1905 ..	..	..	..	..	2	3	..	..	5	2	70
Total for 38 weeks, 1908		7	10	..	..	..	..	..	..	278	141	3247
Corresponding period in	1907 ..	2	4	..	..	5	9	..	..	195	118	3041
	1906 ..	3	7	..	..	6	14	..	..	167	81	912
	1905 ..	3	5	..	..	18	55	..	..	237	132	1389

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Sept. 23, 1908.

NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection

Dog Specialist Summoned—Alleged Cruelty.

A case of much interest to dog owners and dog fanciers was heard at the County Police Court, Birkenhead, on Thursday, 24th September, when Morley F. Allanson, described by the prosecution as a canine specialist, of Moreton, was summoned at the instance of the R.S.P.C.A. for unlawfully and cruelly illtreating a dog, the property of John Edward Lewis Ogden, of Liscard.

Mr. T. Russell Lee was chairman of the Bench, the other magistrates being Messrs. John Elliot, A. G. Rankine, and J. Fergus Smith.

Mr. W. H. Mathison, of Messrs. Thompson, Hughes, and Mathison, appeared for the prosecution, while Mr. Cuthbert Smith, barrister, defended.

In his opening address Mr. Mathison said that he appeared on behalf of Inspector Kennedy, of the R.S.P.C.A. When Mr. Ogden was about to go away for his holiday in July he was recommended to have his dog taken care of by the defendant, who lived at Moreton. The defendant, Mr. Mathison understood, held himself to be a person of some knowledge of dogs, and undertook the care and custody of dogs for payment. Arrangements were made between Mr. Ogden and defendant that defendant should board and lodge the dog, and nothing further, and the animal was fetched by defendant on July 29th. The dog when handed over to defendant's care was in a healthy condition. On August 11th Mr. Ogden returned, and sent a postcard to the defendant asking him to return the dog. No notice, apparently, was taken of the postcard, but a second card was sent, and on August 17th Mr. Ogden received a postcard from the defendant, stating that the dog would be returned in a few days, but it was suffering from worms, but it would soon be all right. On August 29th Mr. Ogden sent another postcard, insisting upon the dog being returned at once. In reply, Mr. Ogden received a letter stating that the dog would arrive the next day. The animal was not returned, and Mr. Ogden, becoming anxious, went to Moreton on September 3rd. He saw defendant, and demanded the dog. After waiting about twenty minutes the animal was carried into the room, but Mr. Ogden was startled to see that it was suffering from blisters on various parts of the body. Mr. Allanson explained that the dog had been suffering from a bad habit, and as a means of preventing this he had blistered it. As to whether such an action as that was justified under any circumstances, he would be able to call before them evidence of undoubted character. The dog was about six years old, and had never been guilty of malpractice previously. The dog was unable to walk, and defendant persuaded Mr. Ogden to leave it for another week. He was not satisfied, but nevertheless consented. The next day he consulted the representative of the R.S.P.C.A., and two days later Mr. Ogden, accompanied by Inspector Kennedy and Mr. Warwick Fowle, M.R.C.V.S., went to defendant's house at Moreton. When they arrived Mr. Allanson was not at home, but his man Williams brought the dog to them. The poor animal was suffering from a copious discharge from the eyes and nostrils. It was unable to walk, and scarcely able to stand, while discharge round the eyes rendered it almost unable to see. The animal was also suffering from an acute attack of double pneumonia. Both knees were inflamed and swollen, while on the abdomen, and inside the right thigh, were recently discharged blisters. They then examined the place where the dog hae been kept, and Williams showed them an open hut wired round, but without any protection from the strong winds. Inside were two boxes on which was placed a plank. The ground was sprinkled with sawdust. To put a dog which was suffering from double pneumonia and sores, without bandages and straw, in such a place, was to grossly neglect it. The defendant was seen a few days later by Inspector Kennedy, to whom he made the startling statement that he blistered the dog because of a bad habit. He would call evidence to satisfy the Bench that such treatment as applied by the defendant was gross cruelty, and unheard of in veterinary practice. The Bench would no doubt be told by his learned friend that an operation, if believed to be for the benefit of the animal and carried out properly, was not cruelty but the cruelty in the section of the law referred to suggested, Mr. Mathison contended, the infliction of unnecessary pain. The defendant was not a qualified man to perform any operation at all, and if any operation had been necessary it was his duty to communicate with Mr. Ogden and receive his authority, but he had no authorityto carry out any operation.

John Edward Lewis Ogden, engineer, of Liscard, to whom the dog belonged, was the first witness called, and he substantiated Mr. Mathison's statement. In answer to several questions put by Mr. Mathison, witness stated that he was not satisfied with the condition of the dog when he called first upon the defendant, and it was with the object of obtaining expert opinion that defendant persuaded him to leave the animal. Defendant told him that he administered cocaine after blistering the dog. When witness, the Inspector, and Mr. Warwick Fowle went to defendant's house on September 5th there was a distinct change for the worse in the dog.

In answer to Mr. Cuthbert Smith, witness stated that defendant said he blistered the dog because it committed the mal-practice mentioned. The defendant was described to him as a canine specialist.

Inspector Kennedy, of the Royal Society for the Prevention of Cruelty to Animals, in speaking of his visit to defendant's house at Moreton, said the dog was carried by Williams to them, and he and Mr. Warwick Fowle examined it. It was in a most emaciated condition, and was practically blind. It breathed with difficulty. It trembled and could hardly stand. Both knees had large sores on them, while there were sores on other parts of the body and blisters on the abdomen. The animal was in very great pain. On September 7th he and Mr. Ogden called upon defendant, and when told of the charge he said, "Oh, it's all spite. I blistered the dog because of the bad habit."

Mr. Cuthbert Smith: Have you made inquiries as to how this place is kept by defendant?

Witness: It is private ground.

Mr. Mathison: You are at liberty now, Inspector, to tell what you have found out.

Mr. Smith: Until I ask, Inspector, the result of those inquiries, you will not do so. However, have there ever been proceedings taken against Mr. Allanson?

Witness: Not to my knowledge.

Mr. Mathieson: You have been asked about Mr. Allanson's reputation—

Mr. Smith objected, and the Bench conferred, and while they were doing so Mr. Mathison decided that he would not press the point.

Mr. Warwick Fowle, veterinary surgeon in the Birkenhead Corporation, etc., stated that he examined the dog with Inspector Kennedy, and found the animal unable to stand. There was discharge from the eyes and nostrils, and it was scarcely able to see. It was in a state of semi-coma, and was suffering from an attack of double pneumonia. Both knees were inflamed and swollen, the left being the worst of the two. There were bedsores on each hock. On the abdomen inside the right thigh were marks of recent blisters. He visited the kennel where the dog was kept and found a hut open in the front. It was clean and all right for a healthy dog, but there was no protection for a dog suffering from double pneumonia. The sores on the knees were, he considered, due to injuries. He had had the care of the animal since, and it was still in a bad

condition, although he was making a hard fight to save its life. If there had been any malpractice on the part of the dog, blistering would be an improper and cruel treatment.

Mr. Cuthbert Smith: If, in fact, Allanson found blistering useful, it would be a reasonable thing for him to do?—I suppose so. Experience is a good teacher.

I understand Mr. Allanson is a man without qualifications?—I believe that is so, although I do not know the man personally.

Is there any special training amongst vets. for dogs?—Yes, college training.

Mr. Mathison: Has it been your experience that blistering for this kind of thing is improper?—I never heard it suggested until I came here. It's entirely opposed to the ethics of veterinary medicine.

Prof. W. O. Williams, F.R.C.V.S., Principal of Veterinary Medicine at the Liverpool University, said he examined the dog the previous morning. It was extremely weak, and had an almost continuous cough. The sores on the forelegs were not the outcome of disease but of injuries, that was, violence. He had never heard of an irritant dressing being applied to so tender a part of a dog's body, and in his opinion it was improper treatment. He thought that probably the dog had been placed in an infected kennel and so contracted pneumonia. He could not understand how the dog got into such a condition by proper treatment if it was healthy on July 29th.

Replying to Mr. Cuthbert Smith, witness said it was gross cruelty to apply an irritant dressing to a blister.

Mr. Smith: Supposing he has done it successfully often, is it a reasonable thing to continue?—There are humane and inhumane methods of treating dogs, and this is the most inhumane method I have ever heard of. There are other methods of treating for such a disease.

This concluded the case for the prosecution, and

Mr. Cuthbert Smith, addressing the Bench on a point of law, argued that there was no evidence that the dog was improperly fed, and that the charge of cruelty could only succeed if the defendant had guilty knowledge that his actions were cruel. Mr. Smith cited a case in which cattle were dishorned to prevent them goring each other, and so causing injury to other cattle. Although the operation caused excruciating pain, it was held that there was no legal cruelty.

Mr. Mathison contended that it was clearly proved that the defendant had been cruel, if not grossly cruel. He asked the Bench to consider whether the purpose the defendant had in mind was reasonable; was the mode of carrying out that purpose reasonable, and was the selected manner of carrying out the operation reasonable. He contended that the treatment was improper and unskilful, and that there was, at any rate, a case for the defendant to answer.

After a consultation of some twenty minutes the magistrates returned. The Chairman stated that the Bench had unanimously come to the conclusion that the defendant made a mistake in his treatment of the animal, and was possibly injudicious. The animal had no doubt suffered severely in consequence, but it had not been proved that there had been cruelty in such a sense as would justify a conviction. The case was dismissed.

The magistrates were were asked to state a case, but they refused to allow defendant costs.—*The Birkenhead News.*

THE HORSE IN HISTORY, by BASIL TOZER. Cr. 8vo., pp. xx. and 304, cloth lett'd, with 25 half-tone plates, 40 pp. Publishers' advts., and several inset advts. 6/- Methuen and Co., 36 Essex Street, Strand, W.C.

Frank W. Wragg Memorial.

Dear Sir,

The first meeting of the Committee of the above will be held at the Royal College of Veterinary Surgeons, 10 Red Lion Square, W.C., on Thursday, October 8th, at 6 p.m., to transact the following business:—

1. To elect a Chairman, Treasurer, and Secretary.
2. To decide as to the form of the Memorial.
3. To elect an Executive Committee to carry out the wishes of the General Committee.
4. Any other business arising out of the above.

Yours faithfully,

Strathmore House, JAMES F. SIMPSON.
Maidenhead, Sept. 29.

The American Veterinary Association.

JOHN GUNION RUTHERFORD, V.S., Veterinary Director General of Canada and Live Stock Commissioner was on Sept. 8th elected President of the American Veterinary Medical Association which is now in Session at Philadelphia, Pa. This is a high distinction as the Association is the largest in the world, covering the continent of North America. Dr. Rutherford is the first Canadian to be elected to this position. His first election to office in the Association was in 1904 when it was in session in this city. He was then made one of the vice-presidents.

Dr. Rutherford was first appointed to the Veterinary Service of the Dominion on March 23, 1901, and was made Director-General on July 1, 1906, ranking in salary with deputy ministers. Under him the veterinary work of the Dominion has grown very rapidly, and the inspection and quarantining of diseased animals is now about as efficient as it well could be.—*The Ottawa Evening Journal.*

ARMY VETERINARY SERVICE.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Sept. 29.

UNATTACHED LIST.

T. W. Lloyd to be Vet.-Lieut. Dated July 3.
W. Ascott to be Vet.-Lieut. Dated July 11.
J. C. Coleman to be Vet.-Lieut. Dated August 11.

INDIA OFFICE.

INDIAN CIVIL VETERINARY DEPARTMENT.

To be Lieut.-Col., Major G. H. Evans. Dated Feb 10.
Capts. to be Majors—J. Farmer, A. Smith, F.R.C.V.S. Dated June 21.

Capt. E. B. Bartlett has been brought on the Home Establishment on completion of a tour of foreign service, and posted to Aldershot for duty.

Capt. F. U. Carr proceeded to Egypt on 24th Sept. to take up the duties of Principal Veterinary Officer Egyptian Army.

Capt. J. B. Southey proceeded to Egypt on 24th Sept. to take up a civil appointment under the Egyptian Government.

Capt. H. E. Gibbs is appointed Officer in Command of 1 and 2 Sections, Army Veterinary Corps, Aldershot.

Lieut. F. R. Kelly embarked in transport "Dongola" on 17th September, for duty in Egypt.

Lieut. J. W. O'Kelly embarked in transport "Dongola" on 17th September, for a tour of service in India.

Capt. S. F. G. Pallin has been transferred from Hounslow to Colchester.

CORRESPONDENCE.

EXEMPTION FROM JURIES.

Sir,

At the present time we hear a lot about new degrees and diplomas, but is it not time, and would it not be money well spent if our Council did something for the present generation of practitioners, in getting removed the objectionable clause and point of law by which veterinary surgeons are compelled to serve on juries.

I to-day applied to the magistrates to have my name removed, in which they would of been only too pleased to do it had the law not stood in their way, and they expressed surprise that we were not exempt as our position was more important than some that were exempt, they also expressed their sympathy with me in a position which would be to me serious if I could not get a locum, besides being a serious matter to the farming public, and they expressed the opinion that we were as much in want of that exemption as medical men and that as a body we ought to move in the matter.

It seems to me that unless we do something we shall always be a laughing stock to others and have a difficulty in maintaining our position. As I do not intend to let this matter drop, would any veterinary surgeons who have obtained their exemption kindly communicate with me, as I am challenged by the clerk to record any case where exemption had been granted in England, one of which I have proof.

It behoves us all to press upon our Council the urgent need of this reform, before other degrees are considered, and cast our votes for the candidate at the next election who will give this the first place on the Council programme.—Your truly,

HERBERT BIBBY.

Swanlow, Winsford.

[Exemption from juries would require an Act of Parliament. Without money the R.C.V.S. cannot move, and there are many objectors to any serious attempt to raise money,—ED.]

TRACHEOTOMY AND STAMINA.

Sir,

It is with surprise that I read that a gentleman with Mr. Litt's experience should advocate the operation of tracheotomy on those thoroughbreds which, though sound, cannot win race simply owing to lack of stamina.

Mr. Litt argues that no possible harm could befall a sound horse as a consequence of the operation. Perhaps not; but he forgets that granted his theory is well founded, and that peculiarities in conformation of the upper air passages are really the sole causes why certain speedy horses cannot stay, he would be inflicting the greatest possible disservice on the whole breed by aiding the least fit. Think for a moment what the effect would be in future generations, if he transformed a two-year-old with enormous speed, but which, through constricted upper air passages, could barely stay three furlongs in October, into the Derby winner of the following year. But with due deference to Mr. Litt, I fear his theory, like the time-honoured tradition that docking strengthens the back, is untenable.

It is questionable if the 'chaser Patlander, on which Mr. Litt performed tracheotomy immediately before the Grand National of 1907, did show any better form in that race than he had done previously. He had won a three-mile 'chase three weeks before without the tube. He did not beat much it is true, but he won, and he was only a very bad third to Eremon at Aintree. Then since his Grand National effort his form has been worse than before he was tracheotomised.

Then take Curzon As a three-year-old he ran second to Sir Visto for the Derby, and had a large field behind him, including the winner of the Two Thousand Guineas. He was then slightly affected in his wind. A tube was inserted, when the roaring became pronounced, at six years old; but even with its assistance he never stayed as well as he did when a three-year-old, and five furlongs in plating company was as far as he could get.

Another somewhat similar case occurs in connection with Blue Diamond, before he was tubed he could stay five furlongs, and he never got any further afterwards. After he went wrong in his wind the tube assisted him to win sprint races, but it did not convert him into a stayer, and latterly he rolled about a good deal when he had run half a mile, even though a plentiful supply of air was passing down his trachea through the tube. His half-sister Trinket won a selling race as a two-year-old, but though tubed she never got her head in front again. Being by Trenton she should have given Mr. Litt's theory an excellent chance if a tube was the only requisite to convert her into a Torpoint.

Stamina however, does not depend on mere oxygenation through the capillaries of the lungs. The presence of certain histological voluntary muscular fibres are vital to a stayer. If these are not present in sufficient numbers, even inhalation of pure oxygen through a tracheotomy tube will not convert a sprinter into a stayer.

As is well known striated muscle is made up of two kinds of fibre, pale and granulated red. The pale fibres contract more quickly than the red, and conduct nerve-engrams better, but they throw out much waste during the process, and are soon tetanised if excessively stimulated. The red fibres are thinner, have more sarcoplasm, their longitudinal striation is more pronounced, and their transverse striation more irregular than the pale ones. Further, the transverse loops in their capillary network are dilated into little reservoirs, greatly exceeding in size the ordinary capillaries. Unlike the pale fibres the red are not readily tetanised by excessive stimulation; they contract in a rhythmical wave-like manner. In sprinters the pale fibres are far the more numerous, whereas in stayers the red variety greatly predominate. In the falcon, for instance, which has the power of long sustained flight, none of the fibres are pale. The waste from the dark fibres is comparatively small, and is easily carried away by the veins from the capillary reservoirs; it does not collect in the muscle and asphyxiate it as is the case with the pale fibre. To however make the dark fibres contract very rapidly requires excessive nerve stimulus. Hence overpowering speed combined with stamina is rare in racehorses, and these attributes are only met with in horses of the very highest class, such as Galopin, St. Simon, and Persimmon.

With less forceful nerve-engrams these horses would have been slow, slower than those in which the pale and red fibres were more equally divided, and would have been quite unable to go with a sprinter whose muscles were made up of a preponderance of pale fibres and who had a medium nerve force. But on the other hand an excessive supply of pale fibres, combined with Galopin's or St. Simon's nerve energy would give us an animal with great speed for a short distance—3 or 4 furlongs—then he would stop, as if shot, swerve, lose his action, and hardly be able to raise a canter as he passed the post. Not only would his muscles be asphyxiated but in addition they would be partially tetanised.

Whether these muscle fibres are transmitted according to Mendel's law of alternative inheritance, or by the more simple theory of blending, is a debateable point. We have, however, in the pages of the Stud Book numerous instances clearly showing that they are inherited quite independently of nerve force and that they are seldom co-related with it. This fact leads to many of those hitherto perplexing and unexpected results in breeding thoroughbreds. The saturation of any warm blooded animal's tissues with oxygen will of course help its greater effort, but it will not convert a physiological sprinter into stayer.

This being so, how can the passage of atmospheric air through a tube in the trachea attain that end? Then at times we must bear in mind a tube is very detrimental to a horse when flat racing. In dirty going, if the wearer is not absolutely making running, it gets choked with mud.

Can Mr. Litt point to a single instance of a horse winning an important race on the *flat* over a distance of ground with a tube in his throat?

J. B. ROBERTSON.